



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,456	03/24/2004	Yong Sung Ham	8733.1038.00-US	2921
30827	7590	05/01/2008		
MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER AHMED, SHAMIM	
			ART UNIT	PAPER NUMBER
			1792	
			MAIL DATE	DELIVERY MODE
			05/01/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/807,456	<b>Applicant(s)</b> HAM ET AL.	
	<b>Examiner</b> Shamim Ahmed	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/24/04</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al (2002/0051109) in view of Chaudhari et al (6,346,975).

Nakanishi et al disclose a process of fabricating LCD device including the steps of forming a first electrode and second electrode, namely pixel electrode (25A) and common electrode (23A), respectively and the LCD device fabrication process further comprises forming a gate line and data line, which are arranged in zigzag configuration, wherein the electrode could comprises as strip configuration (see paragraphs 0012, 0097 and figure 33).

Nakanishi et al also disclose forming an insulating layer over the electrodes, which insulating layer (26) and oriented layer (27) considered to be the claimed passivation layer on the electrodes (paragraphs 0019,0022).

Nakanishi et al remain silent regarding the formation of the orientation treatment on the insulating layer.

However, Chaudhari et al teach the formation of alignment layer overlies the first and second electrode, wherein the alignment layer, resemble as the claimed passivating layer, which alignment is irradiated with ion beam to arrange the atomic structure of the alignment film in the desired direction in order to orient the liquid crystal molecules (col.4, lines 1-20 and col.2, liens 43-50).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to modify Nakanishi et al's oriented layer 27 along with the insulating covering layer with the ion beam irradiated alignment layer of Chaudhari et al for efficiently orient the liquid crystal molecules as suggested by Chaudhari et al.

As to claims 4-8, Nakanishi et al illustrate that the gate line, data line and electrodes are configured to be in zigzag form (paragraph 0097 and as shown in figure 33).

As to claim 20, Chaudhari et al teach the alignment film can be formed using silicon oxide, silicon nitride etc. (col. 5, lines 10-23).

4. Claims 15-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al in view of Chaudhari et al as applied to claims 1-14 above, and further in view of Applicant's admission (AA, herein in after).

Modified Nakanishi et al discusses above in the paragraph but fails to explicitly disclose the typical arrangement of the LCD device.

However, AA illustrates the typical arrangement of the LCD device such as forming a black matrix, color filter and overcoat (see paragraphs 022-0025).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to employ AA's teaching into modified Nakanishi et al's process in order to complete the device as appears to be well known and required steps for finishing the device as suggested by AA.

As to claims 23-24, AA shows a liquid crystal material is disposed in between two substrate, wherein the liquid crystal material is injected in between the substrates (see paragraph 033 at page 6).

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hyun (5,856,854) illustrates LCD device in which electrode, data line and gate line are in zigzag orientation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on Tu-Fri (12:30-10:30) Every Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone

Art Unit: 1792

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shamim Ahmed/  
Primary Examiner, Art Unit 1792

SA  
April 29, 2008